

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

07/717,209 by Cousens *et al.* [hereinafter referred to as the remote or abandoned predecessor Cousens '209 application].

According to the November 27, 2000 Office Action at page 3, both the abandoned predecessor Cousens '209 application and the subsequent Cousens patent disclose "two fusion proteins comprised a first and second polypeptide joined to one another by a flexible linker containing a proteolytic cleavage site." The Office Action provides several pages of rationale to support the Examiner's position that "the flexible nature of the linker was an inherent property thereto as was the fact that it facilitated cleavage of those two polypeptides by a protease."

November 27, 2000 Office Action at page 3-8. The Examiner concludes:

Therefore, the instant specification supports a conclusion that those two fusion proteins of Cousens *et al.* **meet all of the limitations of the instant claims**. [Emphasis added].

Applicants strongly disagree with the Examiner's conclusion and traverse. As will be discussed below, at least two claim limitations are missing from the abandoned predecessor Cousens '209 application but present in the subsequent Cousens patent and, accordingly, the subsequent Cousens patent is not entitled to receive the benefit of the filing date of the abandoned predecessor Cousens '209 application. Moreover, even if the subsequent Cousens patent was available in its entirety as a prior art reference (and it is not), the disclosure of this patent does not anticipate the claims of the present application, as this patent fails to disclose an essential element of the present invention, as presently claimed.

Procedural Background of the Instant Application

Before presenting the substance of their legal argument, Applicants wish to review the pertinent prosecution events in the instant case. During prosecution of the instant application, Applicants swore behind the March 28, 1986 filing date of the Cousens patent U.S. 4,751,180, which derived from an abandoned patent application U.S.S.N. 07/717,209, the '209 predecessor application]. By so doing, Applicants successfully eliminated the continuation-in-part patent as a prior art reference. But, by applying a relation-back principle purportedly pursuant to 35 U.S.C. § 120, the Examiner ruled that the subsequent Cousens patent would remain in the instant case as prior art under section 102(e) because its abandoned predecessor, the '209 patent application, antedated Applicants' declaration. In essence, the inventors of the patentable subject matter in

the subsequent Cousens patent were afforded the exclusionary benefit of the abandoned predecessor application's earlier filing date under the auspices of section 120.

The applicable law: In re Wertheim (C.C.P.A. 1981)

As a threshold matter, Applicants take exception with the Examiner's characterization of the Cousens *et al.* abandoned '209 application as a prior art reference under section 102(e) for the purposes of section 103. Applicants firmly believe that the Examiner's use of the Cousens *et al.* '209 abandoned application is contrary to *In re Wertheim*, 646 F.2d 527 (C.C.P.A. 1981).

The limited circumstances under which the relation-back principle of section 120 may be applied are carefully described in *In re Wertheim*. *In Wertheim* the court addressed the issue of when a patent is entitled to the benefit of the filing date of a remote application. The *Wertheim* court framed the specific issue as follows: "What patent disclosure, or portion thereof, which has been "carried over" through a chain of applications, may be traced back to an earlier application and given its effective date, and then combined with a secondary reference to reject later filed claims under §§ 102(e)/103?"

Specifically, the court stated that "an abandoned application by itself can never be a reference." *Id.* at 535. According to *Wertheim*, the critical legal issue is whether the invention claimed in the subsequent patent finds a supporting disclosure in compliance with section 112, as required by section 120, in the abandoned application so as to entitle that invention to the filing date of the abandoned application for prior art purposes. *Id.* at 537. **If the disclosures of the remote application do not fully support a claim in the patent, or if the claims of the subsequent patent derive essential support from new matter added by later continuation-in-part applications**, then it is not effective for prior art purposes under section 102(e) and 103 as of the remote filing date. This is true even though the disclosed matter in question appeared in the remote application and is carried forward into the patent. In this regard, the *Wertheim* court stated:

We emphasize that the above noted statutes, §§ 102(e), 120, and 112, speak with reference to some specific claimed subject matter It is axiomatic in patent law that questions of description, disclosure, enablement, anticipation, and obviousness can only be discussed with reference to a specific claim which identifies "the invention" referred to in the statutes.

Thus, the determinative question here is whether the invention claimed in the [subsequently issued patent] finds a supporting disclosure in compliance with § 112, as required by § 120, in the [remote application] so as to entitle that invention in the [subsequent patent], as “prior art,” to the filing date of [the remote application].

Without such support, the invention, and its accompanying disclosure, cannot be regarded as prior art as of that filing date.

Id. at 537 (emphasis added):

Furthermore, *Wertheim* criticized and accordingly modified two earlier cases which relied merely on the fact that disclosures in remote or abandoned applications had been “carried over” to later applications. The two modified cases are *In re Switzer*, 166 F.2d (C.C.P.A. 1948) and *In re Lund*, 376 F.2d 982 (C.C.P.A. 1967).

Like the Examiner in *Wertheim*, and as admitted by the Examiner in the instant case in Paper Number 16, page 2 line 16 through page 3 line 9, the Examiner in the instant application has abstracted that portion of the disclosure in the ‘209 predecessor application which is “common to both” the predecessor and its subsequent Cousens patent, *i.e.*, that portion which is “carried over” into the subsequent patent, and effectively used it in combination with a second reference to reject the instant claims as obvious. In this regard, the *Wertheim* court said “[f]or the reasons which follow, we hold that was erroneous.” *In re Wertheim* at 535. Relying on the *Wertheim* rationale, Applicants submit that the instant Examiner’s use of the Cousens ‘209 predecessor application (and its filing date) is similarly erroneous.

Application of the legal standard of In re Wertheim to the instant case

Wertheim is particularly relevant to the instant case in that it, too, involves an abandoned patent application and the continuation-in-part patent derived therefrom. As pointed out by *Wertheim*, new matter can add material limitations which transform an unpatentable invention into a patentable one. A continuation-in-part application does not necessarily insure that all critical aspects of the subsequent application were present in the remote predecessor application. Thus, in such a situation, **only a remote application disclosing the patented invention as required by section 112** before the addition of new matter can be relied upon to give the subsequent patent the benefit of the earlier filing date for the purpose of supporting a section 102(e)/103 rejection.

As was also true in *Wertheim*, instead of determining what filing date the subsequent Cousens patent was entitled to as a § 102(e) reference for purposes of the §§ 102(e)/103 rejection, the instant Examiner relied upon the erroneous rationale that a disclosure which is “carried over” into the patent from previous applications may be used to defeat the patent rights of another inventor. In other words, rather than examining the subsequent Cousens patent in light of §§120 and 112, the Examiner reached back to the abandoned ‘209 predecessor application and retrieved that portion “carried over” into the patent to find the instant invention anticipated. *In re Wertheim* at 536.

If an Examiner “wishes to utilize against an applicant a part of that patent disclosure found in an application filed earlier than the date of the application which became the patent,” the Examiner

must demonstrate that the earlier-filed application contains §§ 120/112 support for the invention claimed in the reference patent. For if a patent *could not* theoretically have issued the day the application was filed, it is not entitled to be used against another . . .

Thus, in a situation such as this, only an application disclosing the patentable invention before the addition of new matter, which disclosure is carried over into the patent, can be relied upon to give a reference disclosure the benefit of its filing date for the purpose of supporting a §§ 102(e)/103 rejection.

In re Wertheim at 537.

The only date the subsequent Cousens patent has under § 102(e) is March 28, 1986, the filing date of the application on which the subsequent Cousens patent issued. Any earlier U.S. filing date for the patent necessarily depends on further compliance with §§ 120 and 112. The Examiner appears to have assumed the existence of the very point at issue here – whether the subsequent Cousens patent is entitled to an earlier filing date of March 28, 1985.

Comparison of the claims of the subsequent Cousens patent with the disclosure of the ‘209 abandoned predecessor application

Keeping in mind the above-described legal standard, Applicants will now discuss in detail the critical differences between these two disclosures.

As was true in *Wertheim*, there are **at least two claim limitations** missing from the ‘209 predecessor application but present in the Cousens subsequent patent “which answer the question of whether to award the [earlier] filing date to the § 102(e) reference patent disclosure.” “If either

limitation, later added as new matter, resulted in the disclosure of a patentable invention for the first time, it is relevant to determination of whether [the subsequent Cousens patent] receives the benefit of the ['209 predecessor application] filing date.” *In re Wertheim* at 538. In this regard, the ‘209 predecessor application did not “expressly disclose” either “hinge amino acids” or “hinge sequences.”

For example, issued claims 16, 19, and 20-22 in the subsequent Cousens patent define the patentee’s “hinge amino acids” and fusion proteins containing such amino acids. Applicants submit that supporting specification for such claims is absent from the ‘209 predecessor application. Applicants submit that the “hinge amino acids” of claim 16, and “hinge sequence” of claims 19, 20, 21, and 22 simply do not find a supporting disclosure in compliance with section 112 in the ‘209 predecessor application. With respect to “hinge amino acids” in claim 16 of the subsequent Cousens patent, the ‘209 predecessor application does not contain that term, does not define that term, does not teach the artisan how to make or use, and does not set forth the best mode contemplated. As such, the subject matter of claim 16 is not properly enabled under section 112. Keeping in mind the above-described legal standard set forth in *Wertheim*, the invention of claim 16 is not properly entitled to the filing date of the predecessor application and thus, cannot antedate Applicants’ invention. Similarly, the “hinge sequence” recited by claims 19, 20, 21, and 22 is a term which does not appear in the ‘209 predecessor patent and is not defined therein. Moreover, the ‘209 predecessor application does not teach the artisan how to make or use, and does not set forth the best mode contemplated as required by section 112. Again, the invention of claims 19, 20, 21, and 22 are not properly entitled to the filing date of the predecessor application and thus, do not antedate Applicants’ invention.

As was also true in *Wertheim*, the Examiner in the instant case does not attach any significance to the absence of express language disclosing “hinge amino acids” or “hinge sequences.” Since the ‘209 predecessor application merely listed, but neither discussed nor described, two amino acid sequences in Table 1 on page 15, the Examiner determined that the above concept was inherently disclosed in the ‘209 predecessor application. Moreover, the Examiner gives little weight to the addition of completely dissimilar “hinge” sequences in the subsequent Cousens patent. However, for support of his inherency argument, the Examiner relies on a portion of the subsequent Cousens patent which is unequivocally “new matter”

relative to its predecessor. For example, at page 7, lines 11-13 of the November 27, 2000 Office Action relies on lines 23-25 in column 4 of the subsequent Cousens patent to support his position that “a linker of at least two amino acids in length and which is composed of only serine and threonine residues is expected to be flexible.” This text was absent from the ‘209 predecessor application and only present in the subsequent Cousens patent. It is readily obvious that the above limitations relating to patentee’s “hinge amino acids” were relevant, indeed, critical new matter. There is nothing in the Lehninger or Löfdahl that would have provided relevant disclosure to support the teachings of the ‘209 predecessor application, because the ‘209 predecessor application is completely devoid of teaching or disclosure on the “hinge amino acids” or “hinge sequences.” The Examiner cannot rely on added language in the subsequent Cousens patent for support.

Clearly, in view of this evidence, the subsequent Cousens patent cannot derive the benefit of its abandoned predecessor’s earlier filing date. Applicants submit that, upon reading the subsequent Cousens patent, it is clear that the above-referenced claim recitations and corresponding new matter are a necessary part of the patentable invention set forth in the subsequent Cousens patent. These limitations and new matter, however, are neither expressly nor inherently part of the ‘209 predecessor application. Thus, absent these limitations and new matter, reliance on the earlier filing date and effective use of the ‘209 predecessor application to transform the Cousens subsequent patent into prior art is not legally permissible and in direct contravention of the holding in *Wertheim*.

In short, the Examiner erred in determining that, since the substance of the relevant disclosure in the ‘209 predecessor application was carried forward into the subsequent Cousens patent, that same disclosure in the subsequent Cousens patent was entitled to the earlier ‘209 filing date, *even though the entire of the subsequent Cousens patent was not*. “While some of the reference patent disclosure can be traced to [the ‘209 predecessor application], such portions of the original disclosure cannot be found “carried over” for the purpose of awarding filing dates, unless that disclosure constituted a full, clear, concise and exact description in accordance with § 112, first paragraph, of the invention claimed in the [subsequent Cousens continuation-in-part] patent, else the application could not have matured into a patent, within the *Milburn* § 102(e) rationale. . .” *In re Wertheim* at 538-539. Without the benefit of the earlier date, Applicants’

previously-submitted Declaration is sufficient to eliminate consideration of the subsequent Cousens patent reference, in whole or in part, as prior art. In view of the holding in *In re Wertheim*, however, the subsequent Cousens patent must be removed as a prior art reference in the instant case.

Both the Cousens patent and the '209 abandoned predecessor application fail to anticipate Applicants' claimed invention

Even if the Cousens patent was available as prior art in part or in its entirety (and it is not), Applicants submit that the instant invention is still patentable over the Cousens patent for the following reasons.

The claims of the present application specifically require that the amino acid sequence of the hinge region be **cysteine-free**. There is nothing in the Cousens '209 application nor in the later-filed subsequent Cousens patent which discloses, teaches, or even suggests that the hinge region of the polypeptide are required to be free of cysteine. Anticipation requires the disclosure in a single prior art reference **of each element of the claim** under consideration. *W.L. Gore & Associates v. Garlock, Inc.*, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *Connell v. Sears Roebuck & Co.*, 220 USPQ 193, 198 (Fed. Cir. 1983); *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); *In re Spada*, 15 USPQ2d 1655 (Fed. Cir. 1990); MPEP §2131. Accordingly, neither the Cousens '209 application nor in the later-filed subsequent Cousens patent anticipate the present claimed invention.

Applicants respectfully submit that the claims of the present application are not anticipated by Cousens in view of Löfdahl and Lehninger and request reconsideration and withdrawal of the rejection under 35 U.S.C. §102(e).

THE §103(A) REJECTION

Claims 60 and 61 stand rejected under 35 USC § 103(a) as being unpatentable over Cousens in view of Löfdahl and Lehninger, as applied in the rejection under §102(e) above, and further in view of U.S. Pat. No. 4,743,679 to Cohen *et al.* (hereinafter "Cohen"). According to the Office Action, the claims differ from those in Cousens and Löfdahl in requiring a cleavage site for *Staphylococcus aureus* V-8 protease. The Office Action states that Cohen shows that the

incorporation of a cleavage site for *S. aureus* V-8 protease at the junction of the components of the fusion protein to facilitate the cleavage of that protein by *S. aureus* V-8 protease was known and practiced in the prior art prior to the making of the instant invention. November 27, 2000 Office Action at page 9.

Applicants traverse. Claims 60 and 61 depend directly or indirectly from claim 47 and incorporate all the limitations of claim 47 therein. As discussed above in response to the rejection under §102(e), several elements of the hinge region recited in claim 47 are not disclosed, taught, or suggested by Cousens. Cohen does not help. The polypeptide constructs disclosed in Cohen do not even have a hinge region. Accordingly, Applicants submit that the claims of the present application are not obvious in light of Cousens in view of Löfdahl and Lehninger, as applied in the rejection under §102(e) above, and further in view of Cohen. Reconsideration and withdrawal of this rejection is respectfully requested.

THE OBJECTION TO CLAIM 50

Claim 50 has been objected to as being dependent upon a rejected base claim. Claim 50 depends from claim 47 and incorporates all the limitations of claim 47 therein. As stated above, claim 47 was rejected under 35 U.S.C. §102(e) as being anticipated by Cousens, in view of Löfdahl and Lehninger.

For the reasons stated above, Applicants respectfully submit that claim 47 is not anticipated by Cousens in view of Löfdahl and Lehninger and, accordingly, claim 50 depends upon an allowable claim. Applicants request reconsideration and withdrawal of this objection.

CONCLUSION

On the basis of the foregoing remarks, Applicants respectfully submit that the pending claims are in condition for allowance. If there are any questions regarding these remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,



Ivor R. Elrifi, Registration No. 39,529
Michel Morency, Limited Recognition
Barry J. Marenberg, Reg. No. 40,715
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY and POPEO, P.C.
One Financial Center
Boston, Massachusetts 02111
Tel: (617) 542-6000
Fax: (617) 542-2241

Dated: May 29, 2001

TRADOCS:1460602.1(VB0@01!.DOC)